# Inside Wallops

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Goddard Space Flight Center
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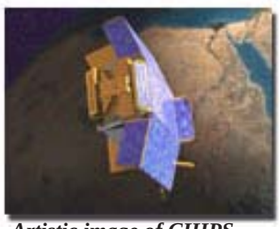
## *NASA'S Ready to Study Cool Ice, Hot Plasma and Ocean Winds*

The month of December will see the launch of three NASA research missions to help us better understand and protect our home planet while continuing to search for life in our universe and inspire the next generation of explorers. The ICESat, CHIPS and SeaWinds missions will help improve life here while searching for life beyond Earth.

The ICESat mission will use a laser instrument to provide multi-year elevation data needed to determine ice-sheet mass balance. The spacecraft also will provide surface and vegetation data around the globe, in addition to specific coverage over the Greenland and Antarctic ice sheets.

ICESat is due to launch from Vandenberg Air Force Base, Calif. on December 19 at approximately 7:45 p.m. EST. Once in its final orbital position, the satellite will orbit the Earth at an altitude of approximately 373 miles (600 kilometers).

The Geoscience Laser Altimeter System, or "GLAS" instrument, on ICESat will use a laser to measure the time it takes for light to travel to the reflecting object and return to the satellite. The data on the distance to the surface, the position of the satellite in space, and the pointing of the laser are all combined to calculate the elevation and position of each point measurement on the Earth. The laser will perform these measurements 40 times each second.



***Artistic image of CHIPS in orbit***

Launching with ICESat is NASA's first University-Class Explorer mission, a suitcase-sized satellite called the Cosmic Hot Interstellar Plasma Spectrometer (CHIPS), designed to explore the birthplace of solar systems. CHIPS will study very hot, very low-density gas in the vast spaces between the stars, known as the interstellar medium, searching for important clues about formation and evolution of galaxies.

The interstellar medium literally contains the seeds of future stars, and all the stars we see were once formed out of the same kind of diffuse gas and dust. When the gas in the interstellar medium cools and collapses, the gas forms clumps that scientists believe evolve into stars and planets. One of the biggest puzzles in astrophysics is the process that turns this very diffuse, hot and cold gas and dust into stars.

Our solar system is located in a region of space scientists call the Local Bubble, which is about 300 light-years in diameter and is filled with gas much less dense than the average interstellar medium. It is this extremely diffuse gas inside the Local Bubble that the CHIPS mission is studying.

The CHIPS satellite weighs 60 kilograms (132 pounds). It will orbit about 590 kilometers (367 miles) above the Earth and is expected to operate for one year.

The CHIPS satellite is sponsored by the Office of Space Science at NASA Headquarters. The CHIPS instrument was built at the Space Science Laboratory of the University of California, Berkeley, and the spacecraft bus was built by SpaceDev, Inc. of Poway, Calif. The project is managed at the NASA Wallops Flight Facility through the Explorers Program.

A third NASA mission, SeaWinds, is NASA's latest Earth-monitoring instrument for measuring the speed and direction of winds over Earth's oceans. Set to launch aboard Japan's Advanced Earth Observing Satellite II (Adeos II) at 8:31 p.m. EST on Dec.13 from the Tanegashima Space Center, the mission is expected to yield improved global weather forecasts and new insights into various Earth research investigations.

The National Oceanic and Atmospheric Administration (NOAA), a chief mission partner, will use the data to improve weather forecasting and storm warnings.

The 200-kilogram (441-pound) SeaWinds instrument will be launched aboard the Adeos II satellite by a Japanese H-IIA rocket. The satellite will circle Earth every 101 minutes at an altitude of 803 kilometers (499 miles). The SeaWinds instrument will make approximately 400,000 measurements every day.

SeaWinds will map wind speed and direction across 90 percent of the Earth's ice-free oceans every two days. Up to 15 times a day, Adeos II will beam down SeaWinds science data to ground stations operated by NASA and the National Space Development Agency of Japan, which will relay them to scientists and weather forecasters.

## *Wallops shorts…….*

### *Rocket Launches*

A NASA Terrier-Black Brant sounding rocket was successfully launched from the White Sands Missile Range, N.M. on November 18. The payload was a UV/Optical Astrophysics experiment to measure the far ultraviolet emission from the hot gas behind the shock generated by the Cygnus supernova. Dr. Erik Wilkinson, of the University of Colorado, was the principal investigator. The payload was recovered.

A NASA Terrier-Orion sounding rocket was successfully launched from Wallops Island on November 20. This mission was to provide a proof of concept demonstration of multiple technologies for the mitigation of the vibration environment associated acoustics with rocket launch vehicles. The experiments included active and passive vibration control measures. Charlotte Gerhart of the Air Force Research Lab was the principal investigator.

### *On the Road*

Russell Dufrene, NASA GN&C Systems Engineering Branch, was a guest speaker at the University of Maryland, Eastern Shore, on November 20 as part of the Distinguish Lecture Fall Series.

### *In the news*

**Eastern Shore Post**
"Proposed Huge Wind Farms Generate Controversy"

**Space News**
"ICESAT, CHIPS Arrive at Launch Site"

**Eastern Shore News**
"NASA Goes 'Flat' with Radar Dish"

**Eastern Shore News**
"Wind Farms Proposals Withdrawn"

**The Daily Times**
"Proposed Virginia Wind Farm Sites Won't Fly"

**Eastern Shore News**
"Public Notice – Environmental Assessment for a Payload Processing Facility at NASA GSFC WFF"

## *Continuing Resolution*

The White House received HJR 124 extending federal government operations through January 11, 2003. OMB anticipates the President will sign the bill. Operations should continue in accordance with the Acting Deputy Chief Financial Officer's guidance issued September 27, 2002.

## *Autumn Turns Chilly*

*by Ted Wiltz, Senior Meteorologist*

From the warmth of October to the chill of November, temperatures took a nosedive last month. Although no new record lows were set, temperatures averaged just over one degree below normal for November. It seemed even chillier, after having temperatures three degrees above normal during October.

No new record high temperatures were set in November. The warmest temperature was a 70 degree reading on November 10 and 11. The coldest air of the season arrived as the mercury plunged to 22 degrees on the morning of November 29.

November continued the wet spell that began last month with rainfall well above normal. There were 12 days with measurable rain, totaling 3.66 inches. This is well above our norms of eight days with rainfall and 2.69 inches accumulation. Slowly, we're working our way out of the drought situation that plagued the area for most of the year.

Looking ahead to January, we can expect even colder temperatures. January brings the heart of winter to the Eastern Shore, with high temperatures averaging only around 44 degrees and lows averaging around 28 degrees. Average precipitation for the month is 3.25 inches, with measurable precipitation usually occurring on 10 days of the month. Snow also becomes much more likely, with an average of nearly three inches occurring during January, usually on two "snow days." January was our snowiest month last year with nearly four inches falling on one occasion. As recently as January 1996, we had a snowstorm depositing 7 to 10 inches on Delmarva.

November brought an end to the hurricane season. It was a fairly active season with 12 named storms forming. Four of these became hurricanes. Two strengthened into major hurricanes, category three of higher on the Saffir/ Simpson hurricane scale. Eight named storms formed during September, the highest number on record for any month. Factor that into your long-term vacation plans! Seven tropical cyclones made landfall in the U.S. and an eighth made an indirect hit. Lili was the first hurricane to make landfall in the U.S. since Irene in 1999.

It's now time to change our focus to potentially hazardous wintry weather that can develop quite suddenly. With the holiday season approaching, many of us will be traveling to visit family and friends. Prepare yourself for the cold, ice and snow. Slowing down and driving with extra care are a must during the winter.


From the Wallops Weather Office, we'd like to wish everyone a blessed, peaceful and safe holiday season.

## *Thanks*

Several Wallops employees took the time to make five-year old cancer patient, Sammy Rosenberg's visit to Wallops on October 24 very special. The following are excerpts from a letter received by Glenn Maxfield, NSROC, Northrop Grumman.

"We want to thank you for all your time and effort in preparing for Sammy's visit and making it a great success. Sammy was on pain medication during his visit to payload and testing, so on the outside he might have seemed less excited, but the wheels were turning and we've been hearing a lot about balance and wobble and the payload experiment."

"We all felt so welcome and loved on our visit – it gave us strength which we take with us and draw from during a most difficult period. Sammy is now in Philadelphia with his father. He just received a very high dose of injected radiation and we pray it works to nuke the cancer, which has really heated up over the past six weeks. I wasn't able to accompany him because I am in my second trimester of pregnancy and can't be exposed."

"Again, thank you for your great kindness. We hope to return again sometime soon."

The family of Sammy Rosenberg

## *NASA Safety Training*

Forklift Safety Refresher (2 classes)
Lockout/Tagout (2 classes)
Aerial Platforms (1 class)

Registration due date
December 31, 2002

Location of all classes
Building E-2 Conference Room

These courses are offered at no cost to NASA civil service and contractor employees.

**Forklift Safety Refresher**
Jan. 14, 2003
8 - 11 a.m. and 1 - 4 p.m.

**Lockout/Tagout**
an 15, 2003
8 - 11 a.m. and 1 - 4 p.m.

**Aerial Platforms**
Jan 16, 2003
8 -10 a.m.

Personnel interested in attending need to complete and submit a training registration or contact Dwayne Rye by email at: darye@pop800.gsfc.nasa.gov or call x1884.

All registration requests must be signed and approved by your immediate supervisor.


The Women Of Wallops-Federal Women's Program will hold a Lunch-N-Learn featuring Jack Bonniwell, Old Dominion University, on Wednesday, December 4, from 11:45 a.m. until 12:30 p.m. in the Building E-2 training room. The topic is, "Back to School, Is it for you?

## *Flu Shots for Contractor Personnel*

The influenza (flu) vaccine is now available to all Wallops contractors.

The vaccine will be given, by appointment, from 1:30 to 3:30 p.m., Monday through Friday, at the Wallops Health Unit. A 20-minute wait is required in the Health Unit after receiving the vaccine.

For information or to make an appointment, call the Health Unit on x1766.

***FEHB Open Season Ends December 9***

## *New Security Processes*

Based on the results of the Goddard Space Flight Center (GSFC) Threat and Vulnerability Assessment, an evaluation of potential local and national terrorism threats, and authorization from the Office of Security Management and Safeguards at NASA Headquarters, GSFC management has decided to reduce the Force Protection Condition.

Be assured that the Wallops Security Office will continue to maintain robust and effective security measures to protect personnel, information and property. The new security protocols will be changed as threat or risk levels warrant.

With the exception of reductions in the number of random vehicle inspections and escorted visitors, employees should observe few obvious changes in security measures adopted in the aftermath of the disastrous events of September 11, 2001.

For further information contact Jean Lopez on x2536 or by email: Jean.S.Lopez@nasa.gov

***Inside Wallops*** is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found on the NASA Wallops Flight Facility homepage: www.wff.nasa.gov

Editor Betty Flowers